

## SCIENTIFIC MUSEUM.

## Rise and Fall of Lake Ontario.

A correspondent in the last number of "Hunt's Merchants Magazine," gives a very interesting account of phenomena connected with Lake Ontario. It has been long known that this lake is subject to frequent risings and fallings of the waters, and by many it has been supposed that such changes were regular. This, by long observation, has been found to be incorrect; the risings and fallings of the waters are not regular, but oftentimes sudden and produce wonderful effects. At Port Hope, Coborg, Graton, and Colbourne, the water recedes suddenly and leaves the harbor bare, and then returns with a violent roar and invades the land. This portion of Lake Ontario is subject to great submarine convulsions, and sometimes the waters ebb and flow every ten minutes. A convulsion of the Lake took place in September 1845, which gave birth to a terrific thunder storm, and was accompanied by a severe tornado. Another took place on the 5th July, 1850, which created a terrific water spout, which was broken by a bolt of electricity, that appeared to have come from the bottom of the Lake. Part of the water spout in a dark cloud passed over to the land depositing its waters at the heads of the Canada Creek, which raised the said Creek so suddenly as to carry away the railroad bridge of the Schenectady and Utica Railroad, before the trains could be informed of the event.

The waters of Lake Ontario have been known to fall fourteen inches in thirty-six hours, and these waters could not have been carried away in that short period by the river St. Lawrence. The Lake is underlaid with fossiliferous limestone, from the north shore in Canada, to the south shore, and it is not long since Watertown and Lowville were severely shaken by an earthquake; these places being built on the same limestone strata. This section of the Lake sometimes produces fearful lightning storms, one of which visited 1851, while there were three feet of snow on the ground. These facts seem to corroborate the views expressed on page 264, this Vol., Sci. Am., by Mr. Drummond, respecting some earthquakes which had taken place in North Britain.

"If some convulsion of nature were to take place so as to tumble down the falls of Niagara," says the author of the article referred to, "Lake Erie would become a river." Such a convulsion would need to open up a channel through the rock above the present falls a few miles long; some suppose that this was done once before, and that the Falls were down at Lewiston. There is a mystery connected with the rise and fall of the waters of Lake Ontario, which cannot be accounted for by continued rains or the melting of snows.

## Enchanted Mountain in Texas.

They have strange things in Texas, as well as wicked doings. The following account of a great natural curiosity in that country is from the "Texas Telegraph":—"This singular mountain, or hill, is situated on the head waters of the Salles—a small tributary of the Colorado, about eighty miles from Bastrop, in a north-westerly direction. It is about three hundred feet high, and appears to be an enormous oval rock, partially imbedded in the earth. When the sun shines the light is reflected from its polished surface as from an immense mirror, and the whole mountain glows with such a dazzling radiance that the beholder who views it, even from a distance of four or five miles, is unable to gaze upon it without experiencing a painful sensation, similar to that which is felt when looking upon the rising sun. The ascent of the hill is so very gradual, that persons can easily walk up to the top; but the rock is so smooth and slippery that those who make the attempt are compelled to wear the moccasins or stockings instead of shoes. This act, together with the name of the place, Holy Mountain, reminds the visitant very forcibly of the command made to Moses at Mount Horeb, 'Put off thy shoes from off thy feet.' The Camanches regard this hill with religious veneration, and Indian pilgrims frequently as-

semble from the remotest borders of the tribe to perform their Paynim rites upon its summit.

(For the Scientific American.)  
Entomology.

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## III. HYMENOPTERA—(Yoke-winged.)

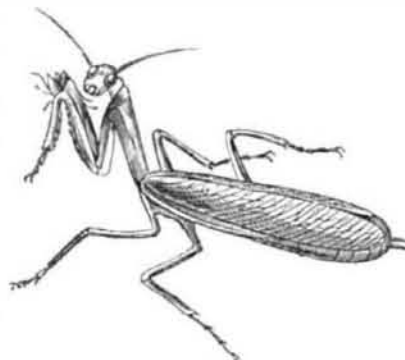


*Amethystina.*

The members of this order, which embraces one-fourth of the insect population, are mandibulate, obtaining what little nourishment they need chiefly by lapping the nectar of flowers with a long tongue which passes through a proboscis like mouth. The anterior wings are larger than the posterior; and in flight the pairs unite by a series of hooks on the edges. The larvæ are very imperfect, and usually supported by the neutral part of the race. They are best developed in warm climates, where some species attain two inches in length and three by the wings. Their life never exceeds a year. Their instinct and locomotive powers are remarkable; and here we find contrivers that do not fall far short of intelligent beings. The last segment of the body in the females is prolonged into an organ, which in one division, *Aculeata*, is a sting connected with a poison reservoir; and in the *Tenebrantia*, an instrument for boring a place for their eggs. In the former, the abdomen is joined to the thorax by a slender peduncle; in the latter they are closely jointed. The former contains the group of Diggers, called Sand and Wood Wasps. They delight in the hottest sunshine, and burrow the sand by brushes or wood by strong mandibles. The ants form another family of this section. Though our species are harmless, some exotics rival the scorpion in sting and bite. In *Galava*, their hills are often 100 feet in circumference, each finished in 7 or 8 hours, containing saloons and galleries, with vaults supported by buttresses and pillars. The mason ants use clay; but the carpenters build with sawdust made into papier mache. As warriors, they exhibit true myrmidonian valor; rival cities like Rome and Carthage pour forth their myriads to decide the fate of their little world. As slave-dealers, they sally forth to pillage negro fornicaries. As darymen, they pasture their milch kine—the Aphides—and milk them by patting the abdomen with their antennæ, which are their instruments of speech. As emigrants, colonies go forth to settle, the blacks carrying their masters, and forming roads by means of formic acid which they eject, as Hannibal cut the Alps. Their strength is wonderful; two or three will drag a young snake alive. The males and females are winged; the neuters tend the grubs. To one tribe medicine is indebted for a valuable stypitic. Wasps have their wings folded when at rest. The cells in a vespiary sometimes number 16,000, peopled with 30,000. The females found the colonies; the males are the scavengers; and the workers control domestic affairs. A native of Cayenne builds its nest of a beautifully polished white pasteboard; but a greyish paper is generally used. The hornet (a dangerous insect) is of a larger genus, and its nest is often of the size of a half peck. Of the melliferous division, the clothier-bees envelope their nests with wool; the carpenter-group bore their cells out of solid wood; the masons build with artificial stone, and the upholsters line their domicils with boquets. The hive of the social bee is a miniature city, divided into streets composed of houses for magazines, habitations, and palaces, constructed on the most exact geometric principles, of a material which man cannot produce—mysterics which have puzzled philosophers from Aristomachus to Huber. The cells are hexagonal, with a pyramidal base formed of three rhomboid plates, whose angles are 109° 28' and 70° 32'. A moderate swarm consists of 12,000, and is laid in two months, 5376 weigh a pound. In a populous hive, the thermometer ranges from 92° to 97°, and at swarming

risers at 104°. Each individual makes about 4 excursions daily, and from 40 to 120 respirations per minute. The apartments are ventilated by rapidly vibrating their wings. Humming-bees (improperly called "Humble") live under-ground in societies of 50 or 60, and draw food chiefly from clover. Of the Sawing Hymenoptera, the family of Gallies are armed with teeth at the extremity, with which they enlarge slits on the oak or fig, and the tear issuing from the wound increases till it forms a covering for the eggs, in the shape of an excrescence. The nuts from Aleppo, containing more tannic acid, are of more value in the manufacture of ink; these are prickly and of a bluish green color. Some resemble beautiful fruits, and are eaten in the Levant. Others are hairy, some like mushrooms, artichokes, or flowers; and are of all sizes, from a pin's head to a walnut. The apples of the Dead Sea are the product of another species. The ovipositor of the saw-fly resembles a hand-saw, and its larvæ a caterpillar. Ichneumons feed on honey and deposit their eggs in the bodies of other insects. Over 3000 species are found in Europe alone. The Chalcids are of a brilliant metallic here, and generally leapers. The Chrysid or golden-tailed flies are often found running in the sunshine upon walls.

## IV. ORTHOPTERA—(Straight-winged.)



*Mantis Religiosa.*

This order includes all insects which masticate, and have two pairs of wings—one enclosing the other. They are distinguished in their incomplete metamorphosis, and the softer covering of their bodies. They are carnivorous or omnivorous, terrestrial, and best developed in the torrid regions. In the family *Cursoria*, the legs are fitted for running. The earwig frequents dark and damp places, and does much injury to fruits and flowers. It sits upon its eggs with all the maternal instinct of a hen. The cockroach is a troublesome insect, infesting beds, pantries, closets, &c. It avoids the light, has an offensive smell, and small wings. The foreign insect (represented in the last figure) is sometimes called the walking-leaf, from the adaptation of its color to that of the leaves about it; but oftener, the praying mantis, from its common posture and soft modesty. It is, however, very cruel and voracious, having a long narrow body and powerful fore legs; they fight one another like infuriated hussars, and are the game-cocks of the Chinese. When alarmed they produce a noise like that of parchment rubbed together. The Phasma or walking-stick has a very long round body, which, when young, is usually green. The tribe *Saltatoria* are leapers, and deposit their eggs in the ground. Grasshoppers are herbivorous, have slender appendages, and do not swarm like locusts; their wing covers, when closed, are roof-like, and their musical powers are such the Spaniards cage them. A hideous looking species from the south of Europe and Africa is devoid of wings. Of crickets, many burrow in the ground, most are nocturnal, and few can fly. The house-cricket is most noisy in the night, fiddling a shrill note by rubbing its wing-cases against each other. It flies like the woodpecker. The chirping of the field tribe is sharp and stridulous. Another species presents the structure and habit of the mole; it does great injury to roots, especially those of sugar-cane. Locusts chiefly inhabit Africa and the south of Asia: what are so called in America being cicada; they are generally of a brown color, about three inches in length, having a head like a horse, two feelers about an inch long, dark eyes, strong jaws acting like scissors, a greenish corslet, and delicate wings, laying 40 oat-like

eggs, and leaping 50 feet. An army of them is an inevitable fore-runner of famine; so immense sometimes as to reach 500 miles, so compact as to eclipse the sun, and the rushing of their wings is like the sound of a mighty cataract—being audible six miles. In the work of destruction they make a noise like flame driven by the wind, and the effect of their bite resembles that of fire. From their putrifying carcasses arises pestilential death, which, in Italy in 591, carried off a million of men and beasts. They are sold as eatables in the bazaar of Bagdad.

## Languages of India.

A work on the Geographical Distribution of the principal language of India, and the feasibility of introducing English as a common language, by the Hon. Sir Erskine Perry, late President of the Supreme Court at Bombay, who has returned to England, after a sojourn in India, of twelve years, has been lately issued in London. He is a profound Orientalist and a European scholar, and has visited the various nations he describes; his views, moreover, are those of a statesman. India, through its whole extent, as now measured by geographers, contains in its computed population of a hundred and forty millions, at least as many languages and nationalities as Europe. According to Sir Erskine, there are two great classes, the northern and southern; the first consists of seven tongues and ten dialects; and the second of six languages without any dialects. The origin of each is curious and historically instructive. But the most remarkable portion of the essay, is the inquiry, whether the common medium of intercourse amongst the educated minds of India, cannot be accomplished—and the English be rendered that medium. The author argues in the affirmative, with full knowledge and confidence, and the time may yet arrive when the English will be the common language of all America, Australia, the Isles of the Pacific, and the whole East Indies.

## Graduating Machine.

We have received three very neat small measure scales from Mortimer Hodge, of Westport, Mass., the divisions of which were laid out and executed by a machine invented by his father, Samuel Hodge, of Patterson, N. J. The machine will divide any given number of equal divisions in any given space, and make the lines of any degree of fineness.—The machine appears to be a good and ingenious one.



## Manufacturers and Inventors.

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